

CLAIMS

What is claimed is:

1 1. An imaging system comprising an image sensor, a memory, and a processor, wherein:
2 the image sensor is configured to generate image signals corresponding to an image of a scene;
3 the processor is configured to control operations of the imaging system in one or more operating modes
4 enabled by one or more configurations accessible by the processor; and
5 the memory is configured to store the one or more configurations accessed by the processor to control the
6 operations of the imaging system.

1 2. The invention of claim 1, wherein:
2 the image sensor, the memory, and the processor are implemented as an SOC in a single integrated circuit;
3 the image sensor is a digital pixel sensor that generates digital image signals for storage in the memory;
4 and
5 the memory is further configured to store image data corresponding to the image signals.

1 3. The invention of claim 1, wherein the imaging system further comprises interface pins, wherein a
2 voltage pattern applied to the interface pins determines which of the one or more configurations is accessed by
3 the processor.

1 4. The invention of claim 1, wherein the one or more configurations are stored in the imaging system.

1 5. The invention of claim 1, wherein the processor is configured to access at least one of the
2 configurations from an external source.

1 6. The invention of claim 5, wherein the imaging system is configured to add from the external source
2 new software corresponding to a new operating mode.

1 7. The invention of claim 1, wherein the imaging system is configured to operate in a still camera mode
2 and a video camera mode.

1 8. The invention of claim 7, wherein the imaging system is further configured to operate in a
2 troubleshooting operating mode.

1 9. A method for fabricating an imaging system comprising the steps of:

2 (a) forming an image sensor;

1 (b) forming a memory; and
2 (c) forming a processor, wherein:
3 the image sensor is configured to generate image signals corresponding to an image of a scene;
4 the processor is configured to control operations of the imaging system in one or more operating modes
5 enabled by one or more configurations accessible by the processor; and
6 the memory is configured to store the one or more configurations accessed by the processor to control the
7 operations of the imaging system.

1 10. The invention of claim 9, wherein:
2 the image sensor, the memory, and the processor are implemented as an SOC in a single integrated circuit;
3 the image sensor is a digital pixel sensor that generates digital image signals for storage in the memory;
4 and
5 the memory is further configured to store image data corresponding to the image signals.

1 11. The invention of claim 9, wherein the imaging system further comprises interface pins, wherein a
2 voltage pattern applied to the interface pins determines which of the one or more configurations is accessed by
3 the processor.

1 12. The invention of claim 9, wherein the one or more configurations are stored in the imaging system.

1 13. The invention of claim 9, wherein the processor is configured to access at least one of the
2 configurations from an external source.

1 14. The invention of claim 9, wherein the imaging system is configured to operate in a still camera mode
2 and a video camera mode.

1 15. A method of operating an imaging system, the imaging system comprising an image sensor, a memory,
2 a processor, and interface pins, the method comprising the steps of:
3 (1) applying a voltage pattern to the interface pins; and
4 (2) accessing a configuration corresponding to the voltage pattern, wherein:
5 the image sensor is configured to generate image signals corresponding to an image of a scene;
6 the processor is configured to control operations of the imaging system in one or more operating modes,
7 wherein the accessed configuration enables at least one of the operating modes; and
8 the memory is configured to store one or more configurations accessible by the processor.

1 16. The invention of claim 15, wherein the voltage pattern applied in step (1) corresponds to logical "0"
2 and logical "1" values.

1 17. The invention of claim 15, wherein the configuration accessed in step (2) is stored in the imaging
2 system.

1 18. The invention of claim 15, wherein step (2) comprises the step of accessing the configuration from an
2 external source.

1 19. The invention of claim 18, wherein step (2) further comprises the step of receiving the configuration
2 from the external source for storage in the imaging system.

1 20. The invention of claim 15, further comprising the steps of:
2 (3) applying different voltage pattern to the interface pins; and
3 (4) changing operating mode.